What we claim is:

1. An apparatus, comprising:

first and second electrodes;

a channel having a photosensitive organic material and extending between the electrodes; and

a light source positioned to illuminate the channel transverse to a direction of current flow therein and configured to produce light with a wavelength capable of changing the conductivity of the material, the channel being configured to operate as an optically controlled switch.

2. The apparatus of claim 1, wherein the light source is situated to illuminate the entire length of the channel.

3. The apparatus of claim 2, wherein the channel has a resistance that decreases by at least 10^4 in response to being illuminated by the light source.

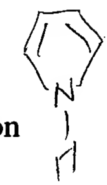
4. The apparatus of claim 2, wherein the channel has a resistance of at least 10^7 ohms when not illuminated.

5. The apparatus of claim 4, wherein the channel has a breakdown voltage of at least 50 volts.

6. The apparatus of claim 1, wherein the light source is a digitally modulated source.

7. The apparatus of claim 2, wherein the organic material comprises molecules with conjugated segments.

8. The apparatus of claim 7, wherein the material includes one of an oligomer and a polymer, the oligomer or polymer comprising phenylenėvinylene, fluorene, thiophene, or pyrrole units.



9. The apparatus of claim 7, wherein the material includes one of an electron acceptor and an electron donor.

10. The apparatus of claim 9, wherein the one of an electron acceptor and an electron donor includes one of C_{60}, a metal-phthalocyanine, thia-pyrylium, squarylium, an azo-compound, perylene, anthanthrone, and nanocrystalline CdSe.

11. The apparatus of claim 2, wherein the light source is one of an LED and a diode laser.

12. The apparatus of claim 1, wherein the first and second electrodes are constructed of the same conducting material.

13. A system, comprising:

a micro-electromechanical (MEM) device; and

a circuit connected to control the MEM device, the circuit including an organic channel configured to operate as an optically controlled switch.

14. The system of claim 13, wherein the circuit further comprises:

a light source positioned to illuminate the channel transverse to a direction of current flow therein and configured to produce light with a wavelength capable of changing the conductivity of the material, the channel being configured to operate as an optically controlled switch.

15. The system of claim 14, wherein the light source is situated to illuminate the entire length of the channel.

16. The system of claim 14, wherein the channel has a resistance that decreases by at least 10^4 in response to being illuminated by the light source.

17. The system of claim 14, wherein the channel has a breakdown voltage of at least 50 volts.

18. The system of claim 13, wherein the channel having a doped organic material whose conductivity is responsive to illumination from the light source.

19. The system of claim 18, wherein the organic material includes organic molecules with conjugated segments.

20. The system of claim 19, wherein the organic material includes one of an oligomer and a polymer, the oligomer or polymer including phenylenevinylene, fluorene, thiophene, or pyrrole units.

21. The system of claim 18, wherein the organic material includes a dopant that is one of an electron acceptor for the organic material and an electron donor for the organic material.

22. The system of claim 21, wherein the dopant includes one of C_{60}, a metal-phthalocyanine, thia-pyrylium, squarylium, an azo-compound, perylene, anthanthrone, or nanocrystalline CdSe.

23. The system of claim 14,
wherein the MEM device comprises a capacitor; and
wherein the circuit is connected to control a charge state of the capacitor.

24. The system of claim 23, wherein the MEM device further comprises a reflector whose orientation is controlled by the charge state of the capacitor.

25. A system, comprising:

a micro-electromechanical (MEM) device; and

a circuit connected to control the MEM device, the circuit including an inorganic channel configured to operate as an optically controlled photosensitive resistor..

26. The system of claim 25, wherein the resistor further comprises:

a digitally modulated light source positioned to illuminate the photosensitive inorganic resistor.

27. The system of claim 25,

wherein the MEM device comprises a capacitor; and

wherein the circuit is connected to control a charge state of the capacitor.

28. A method for producing a drive voltage, comprising:

applying a voltage across an organic photosensitive switch; and

applying a light intensity to the organic photosensitive switch while applying the voltage, the applied voltage being greater than any photovoltaic voltage produced by the light intensity.

29. The method of claim 28, wherein the applying a light intensity comprises modulating the light intensity to have first and second values during a series of first and second periods, respectively.

30. The method of claim 28, further comprising:

applying a voltage across a load element, the value of the voltage being a function of a current in the switch.

31. The method of claim 30, wherein the applying a voltage across a load element produces a voltage across one of a capacitor and an inductor, the one of a capacitor and an inductor being configured to control an orientation of a MEM device.